

Incident Summary #II-1295505-2021 (#25242) (FINAL)

SUPPORTING INFORMATION	Incident Date	November 30, 2021	
	Location	Pitt Meadows	
	Regulated industry sector	Electrical - Low voltage electrical system (30V to 750V)	
	Impact	Qty injuries	0
		Injury description	N/A
		Injury rating	None
	Damage	Damage description	Underground raceways of a private electrical system were damaged along with an ungrounded (347-Volt) phase conductor within one of the raceways.
		Damage rating	Minor
	Incident rating	Minor	
Incident overview	During construction of a new playground an existing privately owned underground electrical system was damaged while installing the new playground structure.		
INVESTIGATION CONCLUSIONS	Site, system and components	<p>Underground electrical installations can be made up of cables and raceways which can transport power from one location to the next. Electrical raceways are channels designed for holding cables, wires, conductors and busbars.</p> <p>The location of underground electrical systems and services is vital not only for the physical protection of direct burial cables and raceways but also for identifying the installation location for alterations or projects requiring excavation in the area around the underground installation.</p> <p>Methods of marking the underground electrical system include marking tape located above the raceways / cables and as built drawings indicating the location and depth of the electrical system. Marking tape is provided above the underground installations as the last line of identification that there are electrical services below.</p> <p>BC One Call does not identify privately owned underground electrical services and systems.</p>	
	Failure scenario(s)	<p>While excavating with an auger for the installation of a new playground, an existing underground private raceway system was damaged. This installation fed power underground from a park power kiosk to a public washroom.</p> <p>While the auger was being used to dig it contacted and damaged the raceway containing electrical conductors. When the operator removed the auger from the earth one of the ungrounded (live) conductors within the damaged raceway was pulled up with the equipment. The strain and force being put on the conductor by the excavation equipment broke it away from the electrical equipment it was being fed from which caused the conductor to become de-energized. The proper personal</p>	

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	<p>were then notified and the rest of the electrical system was de-energized and locked off until repairs could be made.</p>
<p>Facts and evidence</p>	<ul style="list-style-type: none"> -The contractor stated that while excavating with an auger to install a new playground an underground electrical raceway was damaged. This was noticed when the auger was being removed from the ground pulling up the marking tape and a single conductor. -Evidence in the excavated trench of the damaged raceways (Image 1) -A lug was observed to be broken off the meterbase which was feeding power to the conductor that was damaged within the damaged raceway (Image 2). -A statement was given that no one was hurt and no arcing or other signs of electrical failure (smoke / sparking / noises) were noticed in the area of the incident. This statement along with observation of the broken lug in the meterbase provides evidence that when the conductor was being pulled on by the auger it broke the lug off in the meterbase, which would have de-energizing the conductor preventing further damages and injuries. -Marking tape was provided for the underground electrical raceways (Image 1). -Drawings were stated to be available showing location of the underground electrical system.
<p>Causes and contributing factors</p>	<p>Drawings of the location of the underground electrical system were available and the raceways were provided with marking tape. The failure was likely caused by the contractors not identifying the location of the underground raceways and taking steps to avoid it.</p>



Image 1 - Location of damaged underground electrical system.



Image 2 - Location of power feeding the underground system that was damaged and the terminal that was broken off by force causing the conductor to be de-energized.